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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Masahiko Matsukawa

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EXAMINER

ZHENG, LOIS L

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/743,387	Applicant(s) MATSUKAWA ET AL.	
	Examiner LOIS ZHENG	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 16 June 2009 has been entered.

Status of Claims

2. Claims 29, 45-46 are amended in view of applicant's amendment filed 16 June 2009. Therefore, claims 29-48 are currently under examination.

Status of Previous Rejections

3. The rejection of Claims 29-48 under 35 U.S.C. 103(a) as being unpatentable over JP 02-240295(JP'295) in view of Tada et al. US 6,514,357 B1(Tada), is withdrawn in view of applicant's claim amendment filed 16 June 2009.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 29, 31-43 and 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 02-240295(JP'295) in view of JP 59-064781(JP'781).

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JP'295 teaches a process for coating an automobile part by electrodeposition wherein the automobile part is pretreated in with a corrosion inhibiting coating, and without drying, directed treated with an electrodeposition coating. JP'295 further teaches that the automobile part is a steel sheet(translation: page 3 lines 8-19).

However, JP'295 does not explicitly teach that corrosion inhibiting coating comprises the chemical conversion coating composition as claimed.

JP'781 teaches a process for treating a metal surface with a conversion coating solution comprising a silane coupling agent in an amount of 0.5-100g/l and a fluoride compound of Zr/Ti in an amount of 0.01-5g/l(translation: page 2 lines 9-13, page 6 lines 10-20). JP'781 further teaches that suitable silane coupling agent includes γ -aminopropyltrimethoxy silane, N- β -(aminoethyl) γ -aminopropyltrimethoxy silane (translation: page 6 lines 1-2). Example 1 of JP'781 shows a coating solution pH of 4.0(translation: page 7, last line).

Regarding claims 29, 31-43 and 47-48, it would have been obvious to one of ordinary skill in the art to have incorporated the conversion coating solution of JP'781 into the pretreatment step of JP'295 in order to achieve high corrosion resistance and adhesion as taught by JP'781(translation: page 5 lines 13-18).

In addition, the concentration ranges of the silane coupling agent and the Zr/Ti compound as taught by JP'295 in view of JP'781 overlap the claimed silane coupling agent and Zr/Ti compound concentration ranges. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed silane coupling agent and Zr/Ti compound concentration ranges from the disclosed ranges of JP'295 in

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view of JP'781 would have been obvious to one skilled in the art since JP'295 in view of JP'781 teach the same utilities in their disclosed silane coupling agent and Zr/Ti compound concentration ranges.

Furthermore, since the JP'295 in view of JP'781 teach the same conversion coating step utilizing substantially the same coating solution as claimed, the examiner concludes that the conversion coating formed by the process of JP'295 in view of JP'781 is formed via deposition of hydroxide or oxide of Zr/Ti as claimed.

Furthermore, even though JP'295 in view of JP'781 do not explicitly teach the claimed washing of the conversion coated metal base material with ion exchange water prior to electrodeposition, one of ordinary skill in the art would have found it obvious to have washed the conversion coated surface of JP'295 in view of JP'781 with water such as the claimed ion exchange water, in order to remove excess coating material without introducing impurities.

6. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP'295 in view of JP'781, and further in view of Shimakura et al. US 2001/0037748 A1 (Shimakura).

The teachings of JP'295 in view of JP'781 are discussed in section 5 above. However, JP'295 in view of JP'781 do not explicitly teach the claimed accelerator in the conversion coating solution.

Shimakura teaches an aminosilane coupling agent and Zr/Ti fluoride containing conversion coating solution that further comprises persulfates since persulfates contributes to corrosion resistance(paragraphs [0021, 0024]).

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Regarding claim 30, it would have been obvious to one of ordinary skill in the art to have incorporated persulfates as taught by Shimakura into the conversion coating solution of JP'295 in view of JP'781 in order to further improve corrosion resistance as taught by Shimakura.

7. Claims 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'295 in view of JP'781, and further in view of Nagashima et al. US 6,180,177 B1 (Nagashima).

The teachings of JP'295 in view of JP'781 are discussed in section 5 above. However, JP'295 in view of JP'781 do not explicitly teach the presence of claimed adhesion and corrosion resistance imparting agent such as Mg, Zn, Ca, Al, Ga, In and/or Cu ions.

Nagashima teaches an aminosilane coupling agent and Zr/Ti fluoride containing conversion coating solution that further comprises metal ions such as Zn, Mg and Al (abstract).

Regarding claims 44-46, it would have been obvious to one of ordinary skill in the art to have incorporated metal ions such as Zn, Mg and Al as taught by Nagashima into the conversion coating solution of JP'295 in view of JP'781 in order to further improve corrosion resistance as taught by Nagashima(col. 4 lines 51-61).

8. Claims 29-39 and 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 02-240295(JP'295) in view of Shimakura et al. US 2001/0037748 A1 (Shimakura)

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JP'295 teaches a process for coating an automobile part by electrodeposition wherein the automobile part is pretreated in with a corrosion inhibiting coating, and without drying, directed treated with an electrodeposition coating. JP'295 further teaches that the automobile part is a steel sheet(translation: page 3 lines 8-19).

However, JP'295 does not explicitly teach that corrosion inhibiting coating comprises the chemical conversion coating composition as claimed.

Shimakura teaches a process for treating a metal surface with a conversion coating solution comprising a silane coupling agent in an amount of 0.5-100g/l, a fluoride compound of Zr/Ti in an amount of 0.01-50g/l, and persulfates(abstract, paragraphs [0021, 0024]). Shimakura further teaches that suitable silane coupling agent includes γ -aminopropyltrimethoxy silane, N- β -(aminoethyl) γ -aminopropyltrimethoxy silane(paragraph [0014]). .

Regarding claims 29-39 and 47-48, it would have been obvious to one of ordinary skill in the art to have incorporated the conversion coating solution of Shimakura into the pretreatment step of JP'295 in order to achieve high corrosion resistance and processability as taught by Shimakura(paragraph [0004]).

In addition, the concentration ranges of the silane coupling agent and the Zr/Ti compound as taught by JP'295 in view of Shimakura overlap the claimed silane coupling agent and Zr/Ti compound concentration ranges. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed silane coupling agent and Zr/Ti compound concentration ranges from the disclosed ranges of JP'295 in view of Shimakura would have been obvious to one skilled in the art since

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JP'295 in view of Shimakura teach the same utilities in their disclosed silane coupling agent and Zr/Ti compound concentration ranges.

Furthermore, since the JP'295 in view of Shimakura teach the same conversion coating step utilizing substantially the same coating solution as claimed, the examiner concludes that the conversion coating formed by the process of JP'295 in view of Shimakura is formed via deposition of hydroxide or oxide of Zr/Ti as claimed.

Furthermore, even though JP'295 in view of Shimakura do not explicitly teach the claimed washing of the conversion coated metal base material with ion exchange water prior to electrodeposition, one of ordinary skill in the art would have found it obvious to have washed the conversion coated surface of JP'295 in view of Shimakura with water such as the claimed ion exchange water, in order to remove excess coating material without introducing impurities.

9. Claims 40-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'295 in view of Shimakura, and further in view of Nagashima.

The teachings of JP'295 in view of Shimakura are discussed in section 8 above. However, JP'295 in view of Shimakura do not explicitly teach the presence of claimed adhesion and corrosion resistance imparting agent such as Mg, Zn, Ca, Al, Ga, In and/or Cu ions or the claimed pH.

Nagashima teaches an aminosilane coupling agent and Zr/Ti fluoride containing conversion coating solution that further comprises metal ions such as Zn, Mg and Al (abstract). Nagashima further teaches that the pH of the coating solution ranges from 2.0 to 6.5(col. 7 lines 27-44).

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Regarding claims 40-43, it would have been obvious to one of ordinary skill in the art to have incorporated a pH of 2.0-6.5 as taught by Nagashima into the conversion coating solution of JP'295 in view of Shimakura in order to ensure formation of high corrosion resistant coating film without precipitate or deposition of water soluble polymer as taught by Nagashima(col. 7 lines 35-44).

Regarding claims 44-46, it would have been obvious to one of ordinary skill in the art to have incorporated metal ions such as Zn, Mg and Al as taught by Nagashima into the conversion coating solution of JP'295 in view of Shimakura in order to further improve corrosion resistance as taught by Nagashima(col. 4 lines 51-61).

10. Claims 29, 31, 34-36, 39-40 and 43-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'295 in view of Nagashima et al. US 6,180,177 B1 (Nagashima).

JP'295 teaches a process for coating an automobile part by electrodeposition wherein the automobile part is pretreated in with a corrosion inhibiting coating, and without drying, directed treated with an electrodeposition coating. JP'295 further teaches that the automobile part is a steel sheet(translation: page 3 lines 8-19).

However, JP'295 does not explicitly teach that corrosion inhibiting coating comprises the chemical conversion coating composition as claimed.

Nagashima teaches a process for treating a metal surface with a conversion coating solution comprising a silane coupling agent, a fluoride compound of Zr/Ti, and metal ions such as Zr, Mg and Al(col. 4 lines 42-61, col. 5 lines 5-10 and 5-39).

Nagashima further teaches that suitable silane coupling agent includes N-(aminoethyl)

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3-aminopropyltrimethoxy silane (col. 5 lines 37-38). The pH of the conversion coating solution as taught by Nagashima is in a range of 2.0-6.5(col. 7 lines 37-44).

Regarding claims 29, 31, 34, 40, 43-48, it would have been obvious to one of ordinary skill in the art to have incorporated the conversion coating solution of Nagashima into the pretreatment step of JP'295 in order to achieve high corrosion resistance and adhesion as taught by Nagashima(col. 2 lines 21-31).

In addition, since the JP'295 in view of Nagashima teach the same conversion coating step utilizing substantially the same coating solution as claimed, the examiner concludes that the conversion coating formed by the process of JP'295 in view of Nagashima is formed via deposition of hydroxide or oxide of Zr/Ti as claimed.

Furthermore, even though JP'295 in view of Nagashima do not explicitly teach the claimed washing of the conversion coated metal base material with ion exchange water prior to electrodeposition, one of ordinary skill in the art would have found it obvious to have washed the conversion coated surface of JP'295 in view of Nagashima with water such as the claimed ion exchange water, in order to remove excess coating material without introducing impurities.

Regarding claims 35-36 and 39, Nagashima further teaches that the concentration of the Zr/Ti compound is 0.1-15wt%, which overlaps the claimed Zr/Ti compound concentration range. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed Zr/Ti compound concentration range from the disclosed ranges of JP'295 in view of Nagashima would have been obvious to

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one skilled in the art since JP'295 in view of Nagashima teach the same utilities in their disclosed Zr/Ti compound concentration range.

11. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP'295 in view of Nagashima, and further in view of Shimakura.

The teachings of JP'295 in view of Nagashima are discussed in section 10 above. However, JP'295 in view of Nagashima do not explicitly teach the claimed accelerator in the conversion coating solution.

Shimakura teaches an aminosilane coupling agent and Zr/Ti fluoride containing conversion coating solution that further comprises persulfates since persulfates contributes to corrosion resistance(paragraphs [0021, 0024]).

Regarding claim 30, it would have been obvious to one of ordinary skill in the art to have incorporated persulfates as taught by Shimakura into the conversion coating solution of JP'295 in view of Nagashima in order to further improve corrosion resistance as taught by Shimakura.

12. Claims 32-33, 37-38 and 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'295 in view of Nagashima, and further in view of JP'781.

The teachings of JP'295 in view of Nagashima are discussed in section 10 above. However, JP'295 in view of Nagashima do not explicitly teach the claimed aminosilane coupling agent concentration.

JP'781 teaches an aminosilane coupling agent and Zr/Ti fluoride containing conversion coating solution, wherein the aminosilane coupling agent is present in an amount of 0.5-100g/l(translation: page 6 lines 10-13).

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Regarding claims 32-33, it would have been obvious to one of ordinary skill in the art to have incorporated 0.5-100g/l of aminosilane coupling agent as taught by JP'781 into the conversion coating solution of JP'295 in view of Nagashima since JP'781 teaches such a concentration range is best utilizes the effect of the silane coupling agent as taught by JP'781(translation: page 6 lines 10-13).

Regarding claims 37-38 and 41-42, the instant claims are rejected for the same reasons set forth in the rejection of claims 31 and 36 above.

Double Patenting

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 29, 32-43 and 47-48 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. Patent No. 7,250,193 B2 (US'193) in view of JP'295.

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Claims 1-8 of US'193 teach a metal surface treatment process that is significantly similar to the claimed cation electrodeposition process, including the claimed conversion coating with an aminosilane and Zr/Ti/Hf compound containing solution, followed by rinsing and subsequent cation electrodeposition.

Although claims of US'193 do not explicit require that the electrodeposition takes place after the rinsing step without drying, the claims of US'193 also do not explicitly recite such drying step.

JP'295 teaches a process for coating an automobile part by electrodeposition wherein the automobile part is pretreated in with a corrosion inhibiting coating, and without drying, directed treated with an electrodeposition coating(translation: page 3 lines 8-19).

Therefore, one of ordinary skill in the art would have found it obvious to have performed cationic electrodeposition step in the process of US'193 without drying of the conversion coating formed from the pretreatment step with expected success in light of the teachings of JP'295.

Response to Arguments

15. Applicant's arguments filed 16 June 2009 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LOIS ZHENG whose telephone number is (571)272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art
Unit 1793

LLZ